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PROGRESS REPORT

DEVELOPMENT OF AGRICULTURAL ECONOMIC RESEARCH IN JORDAN

by

Dr. William A. Faught
Economic Research Service
U. S. Department of Agriculture
Washington, D. C.

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PROGRESS REPORT

DEVELOPMENT OF AGRICULTURAL ECONOMICS RESEARCH IN JORDAN

by

William A. Faught 1/

The Directorate of Agricultural Economics has made excellent progress in establishing a research program designed to provide information for planning agricultural development. In Jordan, as in most developing countries, agricultural resources provide practically the only basis for future growth and income improvement. The urgent need for information to use in planning effective development of these resources was recognized by the Ministry of Agriculture and the AID mission several years ago and documented in their joint request in 1969 for assistance in establishing a research program to provide the necessary information. The urgency of this need increases with the passage of time. The progress which has been made clearly illustrates the feasibility of the program and the determination of the Ministry to carry the program forward in spite of the great difficulties imposed by the continued disturbances. It is of the utmost importance that this progress not be deterred.

It is strongly urged, therefore, that the specific steps outlined in this report be implemented as rapidly as possible in order to provide for the continued development of the program recommended in the 1969 report. 2/ That report outlined a long-range program of research in agricultural economics designed to provide both the public and private sector with information necessary for rational planning decisions. It was not intended to present an exhaustive set of recommendations but rather to focus on the most pressing questions and to provide guidelines for the development of a program over a period of several years. It was recognized that the recommendations would need to be reviewed and perhaps refined and revised as conditions changed; also, as the initial stages of development of the Directorate were completed, that consideration should be given to developing detailed plans for additional phases.

Accordingly, the Ministry of Agriculture requested AID to provide assistance in a review of Directorate activities early in 1971. The impending reorganization of the Ministry makes this review most timely. The present report, prepared in response to the request for assistance in the review, considers the general development of the program and the more detailed needs for training and assistance of consultants. It does not attempt to specify the particular phases of work to be initiated in the immediate future or details of how these phases should be developed. These decisions can best be made by those directly involved in the research, in consultation with representatives of other Government of Jordan agencies engaged in planning for economic development, and with special

1/ Economic Research Service, U.S. Dept. of Agriculture, on temporary duty with USAID/Jordan.

2/ Faught, William A., and Daniel, Eddie. Implementation of Agricultural Economics Research in Jordan, April 14, 1969, U.S. Dept. of Agriculture, in cooperation with U.S. Agency for International Development, Amman, Jordan.

advisors that might be provided by AID. In this connection, it is noted that the Economics Committee, to be composed of representatives of the Ministry of Agriculture and other agencies and to act as advisory group for the Directorate, has not been in operation. The organization and operation of such committee is specified in the agreement for Project No. 278-11-140-134 entitled "Agricultural Economics and Planning between the GOJ and AID." It is suggested, therefore, that the establishment of such a committee be considered at this time. With some of the initial phases of establishing the Directorate having been completed, and with planning for future phases under the reorganized Ministry getting underway, an advisory committee as contemplated in the agreement could serve a useful purpose.

The following comments on reorganization, program development, and training and consulting needs have been prepared after discussions with various members of the Directorate's staff. However, they represent only the views of the writer and may or may not represent a consensus of the staff.

SOME IMPLICATIONS OF REORGANIZATION OF THE
MINISTRY OF AGRICULTURE FOR THE DIRECTORATE
OF AGRICULTURAL ECONOMICS

The reorganization of the Ministry of Agriculture, scheduled for implementation in March 1971, will have a considerable impact on the operation of the Directorate and on plans for its future development. 3/ Decentralization of Ministry activities on a district or Governorate (regional) basis, as specified in the plans for reorganization, provides an excellent opportunity for strengthening several areas of the Directorate's work. Research areas that would be favorably affected include: (1) the collection of basic data by the Statistical Branch on land use, yields, production, livestock numbers, and prices paid or received at various marketing levels; and (2) the development of input-output and cost studies by the Cost and Efficiency Branch. Both the extent of coverage and timeliness of data should improve if a competent, well-trained field staff can be recruited and maintained. The Chiefs of these two Branches with one or, at most, two assistants should be able, with the assistance of District Supervisors, to develop detailed plans, supervise the field staffs, coordinate the work and, with District supervisors or inspectors being responsible for analyzing and summarizing data for their Districts, bring together the results from all Districts and release national reports promptly.

On the other hand, decentralization of the personnel and activities of the Demand and Price or the Planning, Follow-Up, and Evaluation Branch would create serious problems. For example, although collection of price data by the Statistical Branch would be facilitated by decentralization, the analysis of these data by the Demand and Price Branch to determine factors affecting prices and to establish quantitative measures of relationships necessary for policy decisions requires that data for the entire Kingdom be brought together and

3/ The circular regarding reorganization announced by the Ministry is included in Appendix A.

considered as a whole. Only two or three well-trained economists should be required for this analysis, but they will need to work closely together and have computer facilities, such as those in the Statistics Department of the Ministry of National Economy, available for their use.

Similarly, centralized operations will be required for the Planning, Follow-Up, and Evaluation Branch to provide: (1) guides for establishing optimum production-marketing systems or optimum development of resources and (2) for the establishment of functional relationships of the various sectors and sub-sectors of the economy. Again, only two or three well-trained economists will be required, but it is essential that their work be closely coordinated and that they have available computer facilities and supporting clerical personnel.

Finally, the problem of providing badly needed on-the-job training will be complicated for all Branches. Such training would involve not only formal academic training such as might be provided by the Statistical Institute, Jordan University, A.U.B. extension, or other institutions, but also training of field staffs by Branch Chiefs or other supervisors in survey or analytical techniques.

It is recommended that particular attention be directed to the coordination of activities and training of personnel of the Statistical and Cost and Efficiency Branches. Otherwise, the advantages to be derived from dispersing staff to field locations may be lost. Responsibilities of field and central staff in the development of regional reports and the aggregation of regional data for national reports should be clearly specified. Other considerations regarding the future work conducted by these Branches are outlined in the section which follows.

It is also recommended that activities and personnel associated with demand and price analysis or with national planning and evaluation be retained in the central office of the Directorate in the Ministry and not be dispersed to field locations. Further, it is recommended that very high priority be given to recruitment and training of staff to man adequately the two Branches concerned with these research activities. Planning cannot be done effectively without the results of the research outlined for these Branches.

RESEARCH PROGRAM

The research program proposed in the April 1969 report has been reexamined in light of developments during the past 2 years. This reexamination and discussion with members of the Directorate staff indicate no changes in conditions which would justify modifying the original proposals at this time. Therefore, the general program outlined appears to provide a valid basis for developing the program over the next several years.

The original proposals were directed to the research in four organizational units that, under the reorganization, will be incorporated in the Agricultural Economics Division. The Marketing Division and the International Relations Division were not considered. Since the status of the Marketing Division is

still uncertain and the functions of neither Division are fully defined, these two Divisions are not considered in this discussion.

Cost and Efficiency Studies

Emphasis should continue to be placed upon on-farm cost of production studies, extending them to all major producing areas and to all major agricultural products. The reorganization of the Ministry can facilitate the collection of necessary data. However, care will have to be taken to assure that the advantage of more rapid data collection is not lost through increased time for analysis and reporting as a result of scattered participants and limited staff in the Ministry Directorate. If reports are to be completed in a timely manner, it appears essential to involve District representatives of the Directorate in the analysis and preparation of reports for their regions. Close contacts will have to be maintained between the Branch Chief and all District personnel involved in a common study in order to achieve proper coordination. Adequate transportation must be provided if the coordination problem is to be solved.

Before initiating new on-farm costs of production studies, techniques used on previous studies should be reexamined from the point of view of not only improving the techniques, but also fitting them to the new methods of operation which will be required in the new organization. It is also suggested that ways be further explored of supplementing simple cost data with information on physical quantities of inputs such as labor, fertilizer, and other items and on yields associated with varying levels of these inputs. These data also should be supplemented by data from the test and demonstration plots to provide further information on yield response to different cultural practices. Securing these supplementary plot data will, of course, require the cooperation of the Directorate of Research and Extension and of those conducting the demonstration work on the wheat project. Data from these several sources can provide the basis for sound economic conclusions as to the most profitable farming methods, sizes of farms, and combinations of enterprises. Likewise, they can provide the basis for conclusions as to the most profitable use of resources for a region.

Delineation of homogenous farming areas should also be done before additional cost or input-output studies are started. Delineation of these areas, as suggested in the 1969 report, will facilitate development of farm plans to maximize income and in planning the best resource use.

It does not appear advisable to initiate cost studies of storage, handling, or processing functions at this time. The relationship of work by the Directorate in this area and that of the Department of Marketing and the Marketing Corporation should be clarified before such studies are started.

Demand and Price Analyses

Very little work has been undertaken in this area because of lack of personnel, but the continuing question of division of work between the Directorate and the Department of Marketing also poses a serious problem. Any major expansion of

work will require a solution to those two problems. If personnel become available, studies of seasonal and geographic variation in prices and of price relationships in foreign markets and at different levels in the domestic market should be given high priority. Such studies would be directly useful in evaluating the performance of the present marketing system and would be indirectly useful in developing recommendations to improve income on typical farms in each region and in determining desirable production adjustments in each region.

Other areas suggested in the 1969 report might be started when additional personnel are available and the question of appropriate areas of study in the Directorate and the Department of Marketing is settled.

Planning, Follow-Up, and Evaluation Studies

The work in this area has been confined to the development of (1) background reports on the influence of rain on production and reports on foreign trade, and (2) feasibility or evaluation studies of existing or proposed development projects. Work cannot be done on studies to provide the basis for broader planning for regions or the Kingdom until more of the basic input-output and cost studies are completed and additional information on markets and prices is developed. Therefore, it is suggested that major emphasis should continue to be on the evaluation of ongoing projects and new proposals and the development of reports or materials requested by the Ministry or JDB. As time permits, study should be started of techniques and analytical methods used in planning regional and national development. Familiarity with these methods will not only enable the staff to move ahead promptly when the necessary basic information is available, but also will assist in planning the development of the basic information so it can be effectively utilized in the development planning work.

Collection of Basic Statistical Data

Work in this area has been, and will continue to be, hampered by the fact that the function of the Directorate relative to the Department of Statistics (Ministry of National Economy) in collecting basic statistics has not been clearly established nor a means of coordinating the work of the two agencies effectively developed. This problem has persisted for several years, resulting not only in duplication and waste, but even more important, the undermining of confidence in many of the statistical series. It is understood that the assistance of FAO has been requested to study this question and seek a solution. The FAO representative is scheduled to arrive in April. The Ministry is strongly urged to support the efforts to solve this problem. Unless a solution is found, the opportunity of materially improving the reliability and usefulness of agricultural statistics resulting from the reorganization of the Ministry likely will have been lost.

If the solution should provide for the Directorate to collect specified annual or other statistics relating to agriculture, it is essential that first consideration be given to establishing the reliability of the data and the confidence of users. This will require that scientifically sound sampling procedures

be developed and established for each series and that training and sound supervision for enumerators be provided. The assistance and advice of the Economics Committee, recommended for establishment earlier in this report, should be useful in establishing acceptable procedures and confidence in the data.

As pointed out in the earlier report, the Statistical Branch should be responsible for collection and processing of all regular series and, in cooperation with other Branches, for collection of data for special research studies. It is also essential that one or more members of the Statistical Branch become proficient in application of automatic data processing programs.

TRAINING NEEDS

At the time the 1969 report was prepared, the Directorate had only one employee with formal academic training in agricultural economics. At the present time, with the transfer of personnel formerly in the Research Directorate, recruitment, and return of trainees, the staff includes six members with a bachelor's degree with an agricultural economics major and three with a master's degree in agricultural economics. While this development represents excellent progress, the need for additional training at all levels noted in the 1969 report still exists. The need for some continued training will exist even after a full staff of economists is established in order to keep them abreast of new research developments. Such training might include formal academic training as well as participation in short courses, seminars or workshops, and on-the-job training.

The long-term training needs cannot be specified in detail until the function and staffing pattern of each unit in the Directorate are finally established. It is expected that the specifications of functions and staffing will be completed and approved in the near future. It is recommended that, at that time, a representative of the Directorate meet with the AID Agriculture Division and Training Assistant and representatives of other agencies which might sponsor training activities, for the purpose of developing a long-range plan to provide for a systematic program to meet the training needs for the next several years.

In the meantime, general goals for the type of training desirable at each level in the Directorate can be specified and a program to provide for most immediate needs suggested.

Directorate Level

As the head of the Directorate, it is desirable to have a person with rather broad knowledge of current economic principles and theory and principles of public administration. It is not necessary for him to have an intimate and detailed knowledge of all the new techniques of economic analysis, but he should at least be familiar with the capabilities and limitations of these techniques. Therefore, it is suggested that, as soon as the work schedule and staffing permit, consideration be given to additional training for the Director. One or, preferably, two semesters (5 or 10 months) in an institution providing combination

training in economics and public administration should be sufficient to provide the needed extension and updating of training. The John F. Kennedy School of Public Administration at Harvard University, along with a number of other institutions, offers programs of the type required.

Division Level

The Supervisor of the Division of Agricultural Economics should have specialized training in agricultural economics, preferably at the doctorate level. The training or experience of this person should provide for both a general knowledge of economic theory and a familiarity with current analytical techniques, in order for him to provide effective leadership for the capable but relatively inexperienced staff being recruited. If such a person can be recruited for this position, he will need no additional training in the near future. However, in view of the very rapid changes occurring in the field of agricultural economics, it is desirable to provide for some refresher courses in the long-range training plan.

The presently designated Supervisor of the Foreign Relations Division already has training in agricultural economics at the master's level. Additional training does not appear needed at this time. As the position develops in the future, some additional training might be desirable, but this cannot be determined at the present.

No consideration has been given the training requirements for a Supervisor of the Marketing Division. This, of course, cannot be determined until the functions of the Division are defined and the person is designated. The same situation applies to other positions established in this Division.

Branch Level

The Chiefs of each of the Branches in the Agricultural Economics Division should have at least a master's degree in either agricultural economics or statistics. The Chiefs of two of the Branches now have such degrees, and their need for additional training is not urgent. However, longer-range plans should provide for training at the doctorate level for people in these positions.

The Chief of the third Branch currently designated in the Division--the Statistics Branch--does not have training at the master's level. It is recognized that the pressure of work likely to exist with the reorganization of activities will make it difficult to free a member of the staff for training. Nevertheless, it is recommended that such training be started within the next year, if at all possible.

The organization of the Division which has been announced apparently contemplates combining the activities of the previous Economic Analysis (Demand and Price) Section and the Planning, Follow-Up, and Evaluation Section. Such combination may be expedient for the present, in view of the stage of development of work in other units and the availability of personnel.

However, it does not appear to provide for the longer-term emphasis on overall planning which is needed. Therefore, it is recommended that consideration be given to restoring the original four organizational units and to the initiation of training a person to fill the position of Chief of the restored Branch of Planning and Evaluation. The Chief of this Branch must have a thorough knowledge of mathematical methods of analysis, as well as a knowledge of economic principle and theory. Although it may be several years before sophisticated econometric methods can be applied in the Directorate, the need will exist before a person can be trained for this position.

District Directorates

It is difficult to determine the level of training desirable for Supervisors at the District level until some experience is gained in the operation of the new organization. If the Supervisor for the Agricultural Economics Directorate in the District is to be responsible for technical supervision of all activities in the District of concern to the Directorate, he should have as a minimum a bachelor's degree, with a major in agricultural economics and the equivalent of six academic hours of training in statistics. Several people being assigned to these positions have such training, and additional training does not appear to be required at this time. An effort should be made to provide people with such training in all positions. If some people assigned to such positions are lacking in statistics, this need might be met by training offered by the Statistical Institute.

If Supervisors are to be responsible for analysis of data and preparation of reports, as suggested earlier in the section on program development, it would be desirable to provide in the long-range plan for raising the training of Supervisors in at least a few key locations, to the master's level.

In any case, Supervisors will have to have some on-the-job training in the collection and handling of routine data and in the development of special surveys such as input-output studies. Depending on the job to be done, this might be provided by Branch Chiefs in the course of regular visits with Supervisors or in discussion sessions held in the Ministry and attended by all Supervisors. In some instances, it may be necessary to organize workshops at some central location for training in some special techniques.

Sub-District Level

Holders of agricultural diplomas or secondary school certificates should be able to perform most of the jobs to be done at the sub-District level. However, they will need instruction in collection methods and questionnaire interpretation. Such instructions can be supplied by District Supervisors after they have received training. The longer-range plan might provide for upgrading of the training of some of the sub-District agents to the point where they would meet the requirements for District Supervisors.

NEED FOR CONSULTANTS

It is the consensus of those involved in this review that the assignment of an agricultural economist (direct hire) to the Agricultural Division staff to advise with the Agricultural Economics Directorate is highly desirable. This person should have broad training in agricultural economics so he could effectively advise all Branches on general program development. It is desirable that he have some training or experience in the area of development economics and be familiar with research procedures most applicable to this area. He and the Directorate would need assistance of TDY consultants from time to time in specialized areas. The most immediate need is for a production economist well trained in current research procedures and a highly skilled specialist in statistical sampling.

The production economist would work with the Director, the Supervisor of the Division if available, the Chief of the Cost and Efficiency Branch, and, if it is in operation, perhaps the Economics Committee. He would be concerned with reviewing procedures followed in the cost studies in the past, advising on modification of these procedures, devising procedures to facilitate research operations in the reorganized Ministry, and developing plans for the specific phases of work in this area to be undertaken in the next 2 or 3 years. The consultant selected for this task should have had rather extensive and direct experience in conducting production economics research.

The sampling specialist would work with the Director, Division Supervisor, Chief of the Statistics Branch, District Supervisors, and, if possible, with the Economics Committee. The timing of his trip is dependent upon settlement of the question of allocation of responsibility for collection of statistics between the Directorate and the Department of Statistics. His first task would be to inventory the types of data to be collected in the Directorate, including regular series such as annual production data and special surveys planned for the near future. Second, he would cooperate with Directorate staff in devising statistically sound sampling procedures for each series to be collected. Finally, he might advise the Directorate of means of making application in Jordan. In carrying out his assignment, he would probably need to visit several District offices to familiarize himself with the basis and means of sampling that are feasible and to evaluate alternative procedures. In view of the difficulties regarding reliability of the statistics in Jordan in the past, it is of very great importance that the basis for collecting future statistics be completely sound and defensible against any reasonable criticism. It is essential that the person selected for this assignment be very knowledgeable in sampling theory, and that he be experienced in developing sampling procedures for a wide range of studies.

Less pressing, but still needed in the near future, is a consultant to (1) advise, with the Director and Chief of Branch concerned with economic planning, in developing a research program relating to economic development, and (2) cooperate in drawing up procedures and methods of analysis to be used in initiating the first phase of work. However, a consultant in this field should not be sent until a decision is reached on whether a unit for planning and evaluation is to be reestablished and staffed. A consultant obviously can make little contribution unless he has at least a minimum number of trained people to work with.

NEED FOR REFERENCE MATERIALS AND EQUIPMENT

An adequate supply of readily available reference materials is essential for building a strong research organization. Presently such materials are almost nonexistent in the Directorate. Reportedly, the economics section of the library of the JDB has recently been strengthened. While helpful, this development will not meet the need for reference books for daily use. During the past year the economist from AID and the Directorate staff developed a list of needed materials. It is recommended that this list be reviewed by specialists in the several pertinent fields of research for possible additions or substitutions, and that steps then be taken to secure the books. The original list, with some updating, is on page 11.

Most of the furniture and equipment in the Directorate was damaged or destroyed during the disturbance last year. The major portion of these have been repaired or replaced, however, so there are no urgent needs for additional items in this category in the Ministry Directorate. However, there is a need for simple calculating machines in each of the field locations.

Transportation for staff to carry out research work continues to be a major problem. Decentralization will help to ease this problem somewhat, but there remains an urgent need for Branch Chiefs to visit District Offices frequently or for Supervisors to come to the Ministry for discussion in order to coordinate their work. Without frequent contacts among these people, the full potential of the reorganization cannot be realized. In addition to the need for travel to coordinate work between the Ministry and field, the District Supervisors will have to maintain contact with Extension Agents and others in the villages through whom they must obtain information. One or two Directorate cars could solve the portion of the problem relating to contact between Branch Chiefs and District Supervisors. However, provision of cars for solving the problem of the District Supervisor does not appear feasible. Therefore, it is recommended that the Ministry give priority consideration to solving this by alternative arrangements.

It is requested that one copy each of the following books be procured for the Directorate of Agricultural Economics, Ministry of Agriculture, Jordan. The total cost of books is estimated to be \$300.

Title of Book	Author	Publisher	Price per copy
1. Farm Management Analysis	Bradford & Johnson	John Wiley & Sons New York	\$8.95
2. Farm Business Management. The Decision Making Process	Castle & Becker	MacMillan Company New York	7.95
3. Agricultural Prices	F. Thomsen & R. Foot	McGraw Hill New York	8.50
4. Principles of Farm Management	J. Efferson	McGraw Hill	8.50
5. Marketing Farm Products	F. Shepherd	Iowa State Univ. Press Ames, Iowa	8.95
6. Development Planning	W. Arthur Lewis	Harper & Rowe	4.95
7. Agriculture in Economic Development	Edited by Carl Eicher	McGraw Hill New York	12.50
8. Agricultural Policy	W. Schickle	University of Nebraska Press Lincoln, Nebr.	1.70
9. Practical Business Statistics	F. E. Croxton & D. J. Conden	Prentice Hall	9.95
10. Farm Records and Accounting, 5th Ed.	J. A. Hopkins & E. A. Heady	University Press Ames, Iowa	6.50
11. Decision Making & Management for Farm & Home	C. C. Malone & L. H. Malone	University Press Ames, Iowa	1.70
12. Agricultural Prices & Analysis, 6th Ed.	G. S. Shepherd	Iowa State University Press Ames, Iowa	6.95
13. Agricultural Finance, 5th Ed.	W. G. Murray & A. G. Nelson	University Press Ames, Iowa	9.50
14. Statistics in Research	B. Ostle	Iowa State Univ. Press Ames, Iowa	10.50

Title of Book	Author	Publisher	Price per copy
15. Statistical Methods	G. W. Snedecor & W. G. Cochran	Iowa State Univ. Press Ames, Iowa	\$9.95
16. Agriculture Policy under Economic Development	E. O. Heady	Iowa State Univ. Press Ames, Iowa	10.50
17. Dictionary of Statistical Terms, 2nd Ed.	Kendall & Buckland	Oliver and Boyd	6.50
18. Applied General Statistics, 3rd Ed.	Croxton & Conden	Prentice Hall	10.95
19. Econometric Methods	Johnston	McGraw Hill	7.95
20. The Design of Development	Timbergen	John Hopkins Press Baltimore, Md.	10.00
21. Economic Organization of Agriculture	T. W. Schultz	McGraw Hill New York	7.95
22. Economic Analysis Introductory	P. Samuelson	McGraw Hill New York	8.50
23. Transforming Traditional Agriculture	T. W. Schultz	Yale University Press	6.00
24. Economics of Agricul- ture, Production and Resource Use	E. O. Heady	Prentice Hall Englewood Cliff, N.J.	10.95
25. The American College Dictionary-English	C.L.Barnhart & Jess Stein	L. W. Singer Co. Syracuse, N.Y.	12.50
26. Experimental Design	Cochran & Cox	Wiley & Son New York, New York	10.50
27. Microeconomic Theory	C. E. Ferguson	Richard D. Irwin, Inc.	12.00
28. Principles & Procedures of Statistics	Steel & Torrie	McGraw-Hill	12.00
29. Applied Regression Analysis	Draper & Smith	John Wiley & Sons, Inc.	10.00
30. Interregional Compe- tition Research Methods	Edited by R. A. King	Agricultural Policy Institute North Carolina State Univ. (possibly (free if (contact (King's office	

Book List (Jordan)

Title of Book	Author	Publisher	Price per copy
31. Macroeconomics	Dernburg & McDougal	McGraw Hill	\$11.00
32. Statistical Methods of Econometrics	E. Malinvaud	Rand McNally	20.00
33. Government & Agriculture	Dale Hathaway	The McMillan Co.	8.00
34. CRC Standard Math Tables	--	Chemical Rubber Co. 18901	4.95
35. Linear Programming Methods	Heady & Candler	Iowa State Univ. Press Ames, Iowa	11.00

APPENDIX A

Regulation No. () for the year 1971:
Administrative Organization Regulation
for the Ministry of Agriculture issued
under Article 120 of the Constitution

Article 1: This Regulation shall be cited (the Administrative Organization Regulation for the Ministry of Agriculture for the year 1971) and shall come into force from the date of its publication in the Official Gazette.

Article 2: The following words and expressions wherever mentioned in this Regulation, shall have the meanings assigned thereto hereunder unless the context indicates otherwise.

Kingdom: The Hashemite Kingdom of Jordan
Ministry: The Ministry of Agriculture
Minister: The Minister of Agriculture
Undersecretary: The Undersecretary of the Ministry of
Agriculture
Director: Director of any Directorate in the Ministry
of Agriculture
Director of Agriculture: The Director of Agriculture
in the Governorate or district
Supervisor: The technical assistant for the Director of
Agriculture who is specialized in a specific
field and represents one of the Directorates
of the Ministry of Agriculture
Committee: The planning committee in the Ministry of Agriculture
Coordinating Committee: The coordinating committee in the
Governorate or district

Article 3: The Ministry is responsible for formulating the agricultural policy in the Kingdom and implementing it within the framework of the requirements of the overall development plan to develop the Jordanian society according to the following basis:

1. Formulates the agricultural policy, district operations relating to land distribution and fixing the minimum limit of Agricultural ownerships, as well as, organizing agricultural production in line with the general objective of the state.
2. Work out and execute plans, projects, programs, and agricultural cropping patterns which guarantee an increase in agricultural production and the economic utilization of agricultural resources (plants and livestock) and the implementation, followup, and evaluation of the Development Plan projects.

3. Conduct applied research and studies relative to problems of agricultural production, including research on land, field and orchard crops, pests and diseases, agricultural industries, agricultural engineering, livestock production, animal health, agricultural economics and other studies dealing with the various aspects of agricultural production, with the aim of finding the most suitable and practical solutions which help fulfil the objectives of the development plan.

Article 4: Put into use the results of agricultural research by publishing such results and disseminating them through all extension media in such a manner that suits the environmental conditions and social situations in each area in order that maximum benefits and full utilization of the Ministry's efforts can be made. In addition, this will enable carrying the problems of the farmers to the research organizations at all levels and providing technical advice to the various government agencies, institutions, organizations, and individuals working in the agricultural field.

Article 5: Provide agricultural services under the cooperative system in order to reach the village level and bring about agricultural awareness through the different educational and informational organizations to strengthen the relationship between the people working in the agricultural sector and the Ministry.

Article 6: Compile, tabulate, analyze and publish statistical, economic, and technical data on agricultural production by setting up standard specifications for the different requirements of agricultural production.

Article 7: Supervise the enforcement of agricultural legislation to ensure that the Ministry's mission is carried out, and make proposals on necessary legislation necessitated for the execution of agricultural policy.

Article 8: Strengthen relationships in the agricultural field with foreign countries and organizations, whether they be governmental, international, or private. This will be accomplished by means of representation in agricultural activities, exchange of agricultural fellowships, technical assistance, etc., in various fields of agricultural production, as well as by participating in the activities of these organizations.

Article 4.A: The Ministry's organization will be as follows:

Minister

Undersecretary

Planning Committee

Veterinary and Animal Health Directorate

Forestry and Soil Conservation Directorate

Agricultural Production and Plant Protection Directorate

Agricultural Research and Extension Directorate

Diwan (Central Registry)

Agricultural Economics Directorate

Range Directorate

Administration Directorate

- B: The Undersecretary will be directly responsible to the Minister for the administration of the Ministry with all its directorates, sections, and branches, and shall be responsible for the execution of its policy under the supervision of the Minister in the light of pertinent laws, regulations, and instructions.
- C. The Directors of the directorates, the legal advisor, and the chief clerk (chief of the Diwan) are responsible directly to the Undersecretary.

Article 5: Veterinary and Animal Health Directorate: This will be headed by the Director of Veterinary who will supervise the following:

- A. Veterinary section which consists of the following Branches:
 - 1. Animal Diseases Branch
 - 2. Clinics and Hospital Branch
 - 3. Animal Quarantine Branch
 - 4. Drugs and Supplies Branch
 - 5. Common Disease Branch
- B. Animal Health Institute section which consists of the following Branches:
 - 1. Bacteria Branch
 - 2. Parasite Branch
 - 3. Virus Branch
 - 4.
 - 5. Vaccine Branch
 - 6. Testing Animals Branch
- C. Fisheries section
- D. Chief Clerk's Office

<u>Veterinary and Animal Health Directorate</u>			
<u>Veterinary Section</u>	<u>Animal Health Institute</u>	<u>Fisheries</u>	<u>Chief Clerk's Office</u>
Animal Disease Br.	Bacteria Br.		
Clinics & Hospital Br.	Parasite Br.		
Animal Quarantine Br.	Virus Br.		
Drugs & Supplies Br.	Vaccine Br.		
Common Disease Br.	Testing Animals Br.		

Article 6: Forestry and Soil Conservation Directorate: This Directorate will be headed by the Director of Forestry and Soil Conservation who will supervise the following:

- A. Utilization and protection section which will consist of the following Branches:
 - 1. Utilization Branch
 - 2. Forest Branch
 - 3. Protection Branch
- B. Afforestation Section
- C. Nurseries Section
- D. Soil Conservation Section
- E. Chief Clerk's Office

Forestry and Soil Conservation Directorate

<u>Utilization & Protec-</u>	<u>Afforestation</u>	<u>Nurseries</u>	<u>Soil Con-</u>	<u>Chief</u>
<u>tion Section</u>	<u>Section</u>	<u>Section</u>	<u>servation</u>	<u>Clerk's</u>
				<u>Office</u>

Utilization Branch

Forest Branch

Protection Branch

Article 7: Agricultural Production and Plant Protection Directorate: This will be headed by the Director of Agricultural Production and Land Production who will supervise the following:

A. Rural Engineering Division which consists of the following Branches:

1. Agricultural Equipment Branch
2. Building, Drawing, and Survey Branch
3. Soil Maintenance and Land Reclamation Branch

B. Plant Protection Division which consists of the following Branches:

1. Pest and Locust Control Branch
2. Agricultural Quarantine and Treatment Branch

C. Agricultural Production Division which consists of the following Branches:

1. Fruit Tree Branch
2. Vegetable Crops Branch
3. Nurseries Branch
4. Field Crops Branch

D. Chief Clerk's Office

Agricultural Production and Plant Protection Directorate

<u>Agricultural Engi-</u>	<u>Plant Protection</u>	<u>Agricultural Pro-</u>	<u>Chief</u>
<u>neering Division</u>	<u>Division</u>	<u>duction Division</u>	<u>Clerk's</u>
			<u>Office</u>

Agricultural Equip-	Pests and Locust	Fruit Tree Branch
ment Branch	Control Branch	

Building, Drawing,	Agricultural Quar-	Vegetable Crops
and Survey Branch	antine and Treat-	Branch
	ment Branch	

Soil Maintenance		Nurseries Branch
and Land		

Reclamation Branch		Field Crops Branch
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Article 8: Agricultural Research and Extension Directorate: This will be headed by the Director of Agricultural Research and Extension and will supervise the following Divisions:

- A. Agricultural Research Division which consists of the following Branches:
1. Horticultural Research Branch
 2. Vegetable Crops Research Branch
 3. Field and Industrial Crops Research Branch
 4. Irrigation and Fertilizers Research Branch
 5. Animal Husbandry Research Branch
 6. Plant Protection Research Branch
- B. Agricultural Extension Division which consists of the following Branches:
1. Training Branch
 2. Programs and Extension Branch
 3. Agricultural Information Branch
 4. Agricultural Museums and Fairs Branch
- C. Documents Section
- D. Chief Clerk's Office

<u>Agricultural Research and Extension Directorate</u>			
<u>Agricultural Research Division</u>	<u>Agricultural Extension Division</u>	<u>Documents Division</u>	<u>Chief Clerk's Office</u>
Horticultural Research Branch	Training Branch		
Vegetable Crops Research Branch	Programs and Extension Branch		
Field and Industrial Crops Research Branch	Agricultural Information Branch		
Irrigation and Fertilizers Research Branch	Agricultural Museums and Fairs Branch		
Animal Husbandry Research Branch			
Plant Protection Branch			

Article 9: Agricultural Economics Directorate: This will be headed by the Director of Agricultural Economics and will supervise the following Divisions :

- A. Agricultural Economics Division which consists of the following Branches:
 - 1. Agricultural Statistics Branch
 - 2. Economic Analysis Branch
 - 3. Production Cost and Efficiency Branch
- B. Agricultural Marketing Division
- C. International Relations Division which consists of the following Branches:
 - 1. Training Branch
 - 2. Technicians and Agreements Branch
 - 3. Organizations Branch
- D. Chief Clerk's Office

Agricultural Economics Directorate			
<u>Agricultural Economics</u> <u>Division</u>	<u>Agricultural</u> <u>Marketing Division</u>	<u>International Rela-</u> <u>tions Division</u>	<u>Chief</u> <u>Clerk</u>
Agricultural Statistics Branch		Training Branch	
Economic Analysis Branch		Technicians and Agreements Branch	
Production Cost and Efficiency Branch		Organizations Branch	

Article 10: Range Directorate: This will be headed by the Director of Range who will supervise the following Divisions:

- A. Range Improvement Division
- B. Range Management and Utilization Division
- C. Chief Clerk's Office

Range Directorate		
Range Improve- ment Division	Range Management and Utili- zation Division	Chief Clerk's Office

Article 11: Administration Directorate: This will be headed by the Director of Administration who will supervise the following Divisions:

- A. Administration Division which consists of the following Branches:
 - 1. Personnel Branch
 - 2. Building Branch
 - 3. Supplies and Stores Branch
 - 4. Motor Pool Branch
- B. Finance Division which consists of the following Branches:
 - 1. Budget and Financial Control Branch
 - 2. Accountancy Branch
- C. Chief Clerk's Office

Administration Directorate		
Administration Division	Financial Division	Chief Clerk's Office
Personnel Branch	Budget and Financial	
Building Branch	Control Branch	
Supplies and Stores Branch		
Motor Pool Branch	Accountancy Branch	

Article 12: The Legal Advisor will study all legal cases in the Ministry, coordinate its laws, regulations, and instructions, as well as develop, modernize, and supervise their typing, in the light of the decisions and studies of the committee.

Article 13: "Diwan" Central Registry: This will be headed by the principal chief clerk who will be responsible for all correspondence of the Ministry, messengers, janitors, and for coordinating the relations between the people and officials in the Ministry. He will also be responsible for the following units:

- A. Secretarial and Public Relations Unit
- B. Clerical unit which consists of two branches:
 - 1. Incoming Mail Branch
 - 2. Outgoing Mail Branch
- C. Records and Files Unit
- D. Typing Unit
- E. Janitorial Unit

"DIWAN"

Central Registry

<u>Secretarial & Public Relations Unit</u>	<u>Clerical Unit</u>	<u>Records & Files Unit</u>	<u>Typing Unit</u>	<u>Janitorial Unit</u>
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Incoming
Mail Br.

Outgoing
Mail Br.

Article 14: A. A committee shall be formed in the Ministry to secure regular and coordinated progress of work. It shall be called the Planning Committee and shall consist of the following:

1. The Minister as chairman.
 2. The Undersecretary as vice-chairman to replace the chairman during his absence.
 3. All the Directors in the Ministry, i.e. the Director of Veterinary and Animal Health, the Director of Forestry and Soil Conservation, the Director of Agricultural Production and Plant Protection, the Director of Agricultural Research and Extension, the Director of Agricultural Economics, the Director of Ranges, the Administrative Officer, and Legal Advisors, as members.
 4. The Chief Clerk or the employee designated by the Minister shall be the Secretary of the Committee. He will take minutes of all the meetings and record the decisions in a special file for signature by the Committee members.
- B. Any employee or responsible person may be invited to join the discussions of the Committee and give his opinion as required.
- C. The Committee shall meet at least once every month or whenever necessary.
- D. Subcommittees may be formed by the Chairman as necessary to discuss matters in detail. The results shall be submitted to the Committee.

Article 15: The Committee shall perform the following functions:

- A. Conducting the necessary studies for drawing out a long term (such as 5 years) plan and short term plans for the execution of the country's agricultural policy and for studying the means of financing and executing these plans.
- B. Studying the Ministry's annual budget before it is submitted to the authorities concerned.

- C. Studying the draft laws, regulations, and instructions issued by the Ministry before they are submitted to the authorities concerned.
- D. Studying all agricultural projects of various types in the light of the Country's development policy before they are approved by the authorities concerned.
- E. Drawing out a clear policy for training and qualifying employees of the various levels in Jordan and abroad, approving all the training programs in Jordan and scholarships and training courses abroad as a preliminary step for an appropriate decision by the authorities concerned.
- F. Studying the agricultural draft agreement of various types which are to be concluded with the other countries and organizations before they are submitted to the Council of Ministers.
- G. Approving the publications received by the Ministry.
- H. Approving the guidelines to be adopted by the Directorates of the Ministry in the light of the Ministry's general agricultural policy and evaluating periodically and regularly the accomplishments of each Directorate.
- I. Studying the cases and problems which are not handled in the laws, regulations, or instructions and submitting appropriate recommendations thereon.

Article 16:

- A. To facilitate the Ministry's operations and apply decentralization, the Kingdom shall be divided into a number of areas (governates, districts, subdistricts) as necessary.
- B. The agriculture staff in each area shall be organized in the light of the scope and nature of work and number of population as follows:

Directorate of Agriculture

Veterinary and Animal Health Unit
Forestry and Soil Conservation Unit
Agricultural Production and Plant Protection Unit
Agricultural Research and Extension Unit
Agricultural Economics Unit
Range Unit
Administration Unit

- C. The staff required for each section shall be determined on the basis of the needs for each area.
- D. Every supervisor shall be in charge of the technical operations falling within his sphere of specialization.

- E. The Chief Clerk in the area shall carry out the same duties of the Administrative Officer and Chief Clerk of the Ministry.

Article 17: A. A coordinating committee shall be established in each area as follows:

1. The Director of Agriculture - Chairman
 2. The Directorate Supervisors, i.e. Supervisor of veterinary and animal health, supervisor of forests and soil conservation, supervisor of agricultural research and extension, supervisor of agricultural economics, supervisor of agricultural production and plant protection, and supervisor of ranges - members
 3. The Chief Clerk - Secretary
- B. The coordinating committee shall perform the following functions:
1. The functions of the Ministry's Planning Committee on the area level.
 2. Planning the weekly, monthly, seasonal, and annual programs and operations which will be carried out by the directorate of agriculture in the area as a complete set-up and which will be carried out by each supervisor in the directorate on the basis of well organized and clear coordination of the operations of each supervisor in the area.

Article 18: To facilitate progress of work in the Ministry, work shall be organized as follows:

- A. The Office of the Chief Clerk shall receive all correspondence of the Ministry and refer them, after they are recorded, to the chiefs of divisions in the directorates concerned.
- B. The division chief shall refer the correspondence to the employee concerned for necessary action thereon and shall submit the recommendation thereon to his supervisor.

Article 19: To facilitate progress of work in the directorate of agriculture in the area and enforce the principle of decentralization, work shall proceed as follows:

- A. The Office of the Chief Clerk shall receive the correspondence and refer it, after registration, to the supervisors concerned in the directorate.
- B. The supervisor will study the correspondence and will seek the help of the Chief of branch concerned in his directorate or any other person concerned in his directorate in order to prepare the appropriate information and reply. The supervisor shall sign the correspondence on behalf of the Director of Agriculture within his powers and sphere of competence and will submit the matter to the Director of Agriculture together with his comments on important matters.

- Article 20: A. The Director of Agriculture in the area shall be the Chief of all the Ministry's officials and employees in his area and shall be responsible for implementing the planned activities and projects.
- B. The Director of Agriculture in the area shall be directly responsible to the Undersecretary. He may contact the director concerned in the Ministry on all technical matters. In case of disagreement between the Director of Agriculture and any other directors concerned in the Ministry, the subject will be referred to the Undersecretary for final decision.

Article 21: A special file shall be maintained for the Minister and the Undersecretary which shall contain copies of all the correspondence of the Ministry whether it is signed by the Minister, Undersecretary, or any director in the Ministry. The Minister and Undersecretary will read them daily to be familiar with what is going on in the Ministry.

Article 22: A special file shall be maintained for the Director of Agriculture in the area which shall contain copies of all the official correspondence of his directorate whether it is signed by him or any supervisor in the directorate. The Director of Agriculture will read them daily in order to be familiar with what is going on in his area.

Article 23: Instructions shall be prepared by the planning committee in the Ministry and issued by the Minister defining the following:

- A. Detailed duties of the Ministry, the duties of each directorate in the Ministry, the duties of each directorate of agriculture in the area, the duties of each division, unit, branch, and unit in detail.
- B. Job description of every official and employee in the Ministry and areas.
- C. Methods of work in the Ministry and Districts so that all employees may follow them in carrying out their duties.
- D. Defining the responsibilities and powers of the Directors and Directors of Agriculture in the light of this regulation.

Article 24: This regulation shall cancel the Regulation No. 78 for the year 1967 and any amendments or other instructions contained in any other regulation insofar as they conflict with the provisions of this regulation.

